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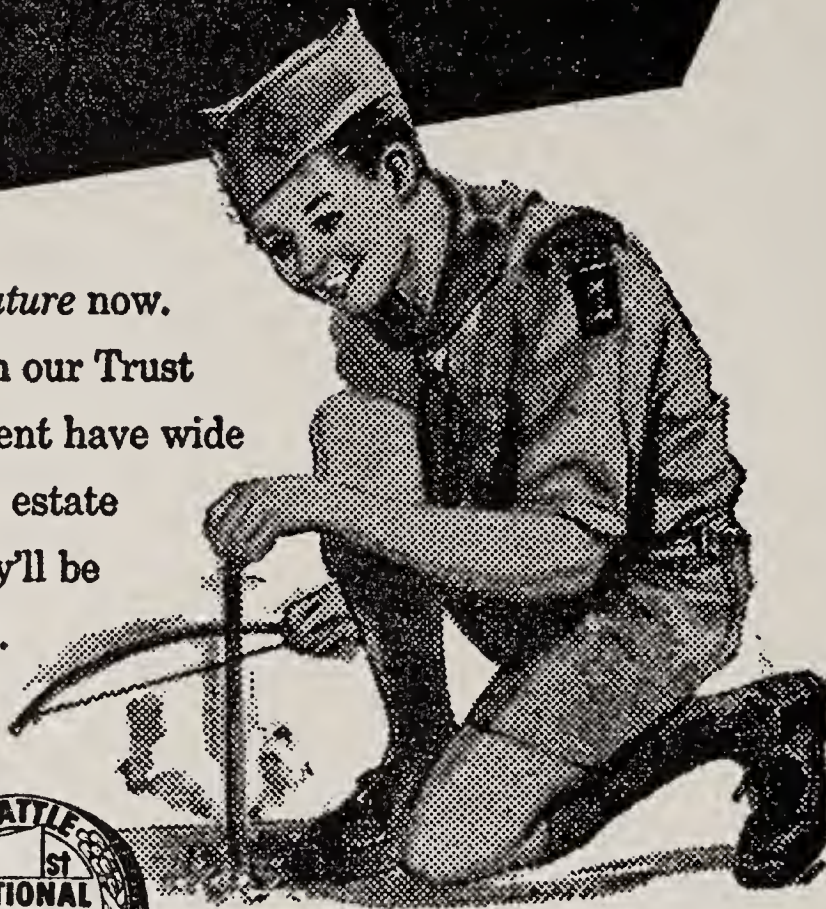
THE UNIVERSITY OF WASHINGTON

Arboretum
bulletin

FALL
1957

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COVER: *Acer tegmentosum*
(See Page 104)

Spring Planting in the Arboretum, 1957

B. O. MULLIGAN

THIS is a continuation of the earlier report in the BULLETIN (Spring, 1957) which covered planting operations from late September, 1956, to early January, 1957.

Owing to unsuitable weather, including several falls of snow in the latter half of January and again in mid-February, only a small number (8) of hybrid crabapples, two groups of *Pyrus* species and six young mountain ashes of the whitebeam (*Aria*) section were planted in their respective sections in the Winkewerder memorial area.

The January rainfall was 1.3 inches below our normal, whereas that for February was over 2 inches and for March nearly 3½ inches above the average, so that the soil was constantly moist well into the spring, until in mid-April the rain slackened considerably.

Planting consequently began again from our nursery stocks in mid-March and continued with increasing tempo in April. In that month we planted on 16 days and set out a total of 357 woody plants belonging to 29 different genera. The largest numbers were of azaleas (125) and vacciniums (69). The nursery foreman and two other men were solely responsible for this work.

May was likewise a busy month in this respect, but using plants grown in pots instead of from the nursery or lath houses. These included a group of our own colored broom (*Cytisus*) seedlings, for further trial; many *Cistus* and *Halimium* plants, to complete the replacement of our former large collection killed by the early freeze of November, 1955, new groups of the hardier *Eucalyptus* and *Hebe* species—with the same objective—in beds close to the Upper Road south of Rhododendron Glen, a number of heathers, a variety of shrubs in the pea family (*Leguminosae*) including species of *Genista*, *Ulex* and *Carmichaelia* from New Zealand. In the borders around the office and greenhouses all vacant places have been filled with a variety of interesting small shrubs or other plants

which enjoy such a warm and sheltered position. During May 725 plants were thus added to the Arboretum collection.

Details of some of the more important plantings follow:

AZALEAS: 9 species, total 60 plants. 25 hybrids, total 92 plants, including 4 Knap Hill varieties. Chiefly on west side of Azalea Way and lower (west) end of Loderi Valley, mostly native of eastern United States.

CAMELLIAS: 11 plants of forms of *C. japonica*, of which 8 were received from the University of California in March, 1956, to the camellia collection.

CISTUS: 11 species or hybrids, 69 plants, to the collection east of the Upper Road. Also 3 species of the related genus *Halimium*, 43 plants, in the same area.

CRABAPPLES: 9 kinds, one plant of each, to the collection; all named selections or hybrids except one. Among them is "Red Jade," received in 1953 from Brooklyn Botanic Garden.

CYTISUS: 5 Arboretum selections of *C. scoparius* forms, 10 plants in all; 12 plants of two other kinds. To the collection, or on bank near Madison Street entrance. Also 4 species of GENISTA, 29 plants, in same locations.

EUCALYPTUS: 6 species, 22 plants in all, near Upper Road. Three species of Tasmanian origin, including *E. coccifera* and *E. Gunnii*.

HEATHERS (*Erica* and *Calluna*): 7 kinds, representing 5 species, totaling 81 plants; by Upper Road opposite to and north of Rhododendron Glen.

HEBE: 11 species, 83 plants in all, to collection. Chiefly raised from seeds, some from New Zealand.

MAGNOLIAS: 6 plants, including *M. obovata* and *M. Sieboldii*, placed in Loderi Valley.

PRUNUS: 3 species of section *Padus*, planted north of the Madison Street playfield

(Continued on Page 118)

Japanese Shrubs In Our Arboretum

I—THE ERICACEAE

PAT BALLARD*

ARE the shrubs of Japan just naturally well-designed, or is their structural beauty the result of centuries of a discriminating weeding-out of less attractive forms? In growing Japanese species from seed it seems to me that many of the plants soon take on a grace of line that needs little in the way of discipline from our pruning blades. Japanese pines, maples, dogwoods, enkianthus, menziesias, and some of the azaleas are living examples of this attractive habit of growth.

When I blithely accepted the stint of recording the Japanese plant material growing in our Arboretum, it didn't occur to me that I might soon be overwhelmed by numbers. But ere long it was necessary to separate the trees from the shrubs. Then, confronted with the enforced picking and choosing of those species to be included in the shrub report, almost every Japanese listing in the card file had some appealing characteristic that made it impossible to leave its charms unsung. So, once again, it seems wise to set up limitations, this time confining ourselves to members of one family. Anyone who knows me at all knows what my first choice would be—my beloved Heaths, the members of the *Ericaceae*. A preference for these acid-loving plants may be influenced by the fact that they do so well in our climate and soil. They have so many relatives among our natives that they look at home in our surroundings and it sometimes takes an expert to point them out as emigrants from a distant land.

Westerners are familiar with the vivid color splashed over our mountains during the autumn months by the blueberries, but as I write this (in July) *Vaccinium Oldhamii* has set its portion of the lath frame aflame without benefit of frosty weather. It is in one of these

frames that we can see the interesting *V. japonicum* with its unusual cranberry-like flower. The pink corolla has four strongly recurved lobes and long exserted stamens, so like *Oxycoccus* that Dr. Nakai called it *Oxycoccoides japonica*. Its fruits are bright red and, like the flowers, hang on slender stalks from the axils of the leaves. In the *Vaccinium* section, west of the magnolias, and in the lath-house, we can see *V. hirtum*, *V. bracteatum* with its rather narrow glossy leaves, *V. uliginosum* which is found in the northern regions of Europe, Asia and North America, as are *V. Vitis-Idaea* and *V. Oxycoccus*. All of these are Japanese blueberries.

Gaultherias have a charm all their own and the Japanese species ingratiate themselves in any situation where our own Salal will grow. Two of the most successful of the foreigners are *G. Miqueliana* with its snow-white berries and *G. adenothrix* with holly-red fruits (fig. 14). Dr. Airy-Shaw of Kew, in his work on Asiatic gaultherias, places *G. adenothrix* in the same series with two of our western natives, *G. ovatifolia* and *G. humifusa*.* Actually, the Japanese species seem to make themselves more at home in our lowland gardens than either of the natives from our own mountains. In the Arboretum these two gaultherias are growing on the south bank of Loderi Valley.

Enkianthus is one of Japan's most enchanting gifts to us, and one that is too seldom used in Western gardens. Its flowers are not large but they drip below the terminal whorls of leaves in hanging clusters of white, deep red, or apricot-yellow striped with red. *E. campanulatus* is probably most familiar to us but the Arboretum also has the colorful *E. cernuus* var. *rubens*. In the greenhouse we have seedlings of *E. subsessilis*. The brilliant fall color and graceful skeletal form in winter gives us

*Another valuable contribution from Mrs. Page Ballard, of the Editorial Staff, who, in her own words, "rides again with her beloved heaths."

*in "Bull. Misc. Inform.," (Kew) No. 7, 315-316, 1940, (1941).

a round-the-calendar performance that puts enkianthus among the "must haves" on our wish lists. They are individualists, and too many in a planting are like an all-star cast, with each prima donna trying to outdo the other. One gives a fine focal point in a planting—a mass of them is just too much of a good thing. The enkianthus may be seen in the Garrett Memorial Planting to the north of Rhododendron Glen.

Epigaea asiatica, the oriental trailing arbutus, is easier to grow than the American *E. repens*, but it has an unfortunate habit of keeping its old leaves long after they have turned brown and crisp. A bit of judicious handpicking would probably do much to correct this fault. This is only a minor inconvenience to those who delight in its rose-colored buds that open to white tubes with deep pink lobes, and in its bronzy new growth. Perhaps a more moist shade than it has in the lath-house would lessen the rather shabby summer appearance.

Two species of *Leucothoe* come to us from Japan and both of them are superior. *L. Keiskei* is an enchanting creeper with red stems, coppery tip foliage, shiny pointed leaves, and sparkling white tubular blossoms in July. W. J. Bean mentions an erect form reaching to 3 or 4 feet in height but the one which we know is the low-growing groundcover. *L. Grayana* is one of the deciduous members of the genus. Its rather thick, deeply veined leaves are very distinctive and its white flowers are borne in terminal racemes as long as 4 inches (the RHS Dictionary says they may be 6 inches). This unusual *Leucothoe* is easy to find in the *Vaccinium* section.

The *menziesias* of Japan will find a member of their genus awaiting them in the Pacific Northwest. It would be interesting to know how many Western gardeners have rejoiced over the good fortune of finding a wild "azalea" only to learn when their new possession bloomed that they had joined the ever-growing ranks of the "Collectors of Fool's Huckleberry." *Menziesia ferruginea* probably flourished in their gardens (as it did in

mine); they will find handsome Japanese members of the genus in the Arboretum which will enjoy the same conditions, but are much more worthy of our time and effort. *M. purpurea* is said to have the most beautiful flowers, but its deep rose bells find close competition in the paler and slightly smaller blossoms of *M. lasiophylla*, and there are those who maintain that the latter's more open habit is superior. Members of the same species take on quite different forms when grown under contrasting conditions. *M. lasiophylla*'s very hirsute leaves move into more horizontal planes and their color is much deeper when they are grown in the shade. In a sunny situation the leaves turn bronzy, are smaller and more revolute, and turn their tips upward. *M. ciliicalyx* is represented in the Arboretum by a number of young plants in the lath-house that show a good deal of promise. One in particular intrigues us with its greenish-white flowers. The type is said to have "corolla pink or soft red with a purplish hue." *M. ciliicalyx* var. *bicolor* has not yet bloomed for us, but according to the descriptions should be "yellowish-green at base, purplish at and near the lobes." The promised color-chart of the American Horticultural Council should be a boon to all of us. Some common ground in arriving at a color description might prevent unfortunate prejudging on the part of the reader.

Ledum nipponicum is a name known to gardeners but one that botanists find somewhat less acceptable. The RHS "Dictionary" cites *L. nipponicum* as a synonym of *L. hypoleucum*, and describes *hypoleucum* as "very close to *L. groenlandicum* . . ." Rehder shows *L. hypoleucum* as a synonym for *L. palustre* var. *dilatatum*, but Bean says *hypoleucum* and *dilatatum* are different varieties of *L. palustre*. We will not quarrel with any of them, but the plant which came to the Arboretum as *L. nipponicum* from Mrs. T. C. Frye is a very attractive white-flowered shrub with leaves and habit somewhat reminiscent of some of the small-leaved rhododendrons.

(Dr. Copeland says* that in physical structure ledums are very close to rhododendrons, particularly to *R. micranthum*.) Certainly to most of us *L. nipponicum* looks much more like a low growing *L. palustre* than it does like Labrador Tea. Since the RHS "Dictionary" states that it is in N.E. Asia that *L. palustre* and its subspecies meet, we can assume that the various forms of the E. Asian ledums are as confusing as those of W. America, and with that assumption we will thrill to the sight of *L. nipponicum* whatever its name should be.

Pieris japonica is found in almost any Pacific Northwest nursery, more often than not labelled "*Andromeda japonica*" and described as a "lily-of-the-valley shrub." In an 1844 publication, J. C. Loudon listed seven genera which had been "instituted out of the Genus *Andromeda*"** and every one of them had an inflorescence which could be described as like those of the Lily-of-the-Valley. How we do resist change! Someday some brave soul will crusade for more properly named nursery

*in "Amer. Midl. Natur.", 30, (3), 608-613, (Nov. 1943).

**in "Arb. et Frut. Britann." II, 1077 (1844).

plants and when that day comes the gardeners of the world will rise up and bestow upon him honor and acclaim. But here again, whatever its name, we all grow *Pieris japonica* and love it for its colorful new foliage, its early show of flowers, and its reputation as an excellent garden subject. The Arboretum has several forms, including variety *variegata* with its whitish leaf-margins, and a pink-flowered form.

Arcterica nana, or *Pieris nana*, grows in N.E. Asia, its range extending south into central Japan. Another of the creeping Heaths, this little shrub is distinct for its miniature proportions, and because it carries its leaves in 2's or 3's. The tiny white bells hang in drooping terminal racemes, and the midvein of its elliptic leaves is deeply impressed. It grows in the south lath-house.

This is the place to see other small treasures of the Heath family, also. *Chiogenes hispida*, a native of both eastern and western N. America, with a close relative in Japan, grows under the same conditions as the cranberry and if happy will form a "green carpet stud-

Below:

Gaultheria adenothrix—Mrs. Ballard's garden (Fig. 14)



ded with white berries" according to Dr. Rehder.

Cassiope lycopodioides is found from Alaska to N. E. Asia and Japan. In the lath-house is one of the healthiest specimens I have seen. It is well worth visiting at any time but in the spring it is covered with little red-sepaled white flowers, held above the foliage on almost invisible pedicels. It is much more prostrate than our native *C. Mertensiana* and less prone to brown-off in the center. *C. Stelleriana* (*Harrimanella Stelleriana*) is another American shrublet found in Japanese Floras. In this cassiope the tiny leaves stand out from the branches instead of being imbricated, and its ivory corolla lobes are more deeply cut. It also has a red calyx.

Phyllodoce nipponica is more compact than either of its western American relatives, *P. empetriformis* and *P. Breweri*. Our specimen is certainly much more than the 6 inches described by Royton E. Heath, in "Shrubs for the Rock Garden and Alpine House" (1954), and much more compact in habit than our Western species. It is easy to agree with Mr. Heath's statement that it is "possibly the best of all the phyllodoces" when we see its branches sparkling with umbels of white bells set off by red sepals. The RHS "Dictionary" says that the red-sepaled form is var. *amabilis*. *P. aleutica* travels as far as northern Japan and Kamchatka and though its urn-shaped flowers may resemble those of *P. glanduliflora* in color, they are almost as broad as they are long.

To be or not to be? Dare we consider *Clethra* as a member of the *Ericaceae*? This is the sort of thing that sends the neophyte into a state of confusion. There are authorities who subscribe to either theory, and to the botanical novice it is difficult to understand some of these taxonomic distinctions. The family distinction is said to rest upon its *five distinct petals*, its *3-celled ovary*, its *imbricated calyx*, and its *inverted anthers* (in bud). Five members of the *Ericaceae* have distinct (separate) petals — *Tripetaleia*, *Elliottia*, *Cladothamnus*, *Ledum* and *Leiophyllum*.

Tripetaleia and *Tsusiophyllum* are 3-celled, while *Loiseleuria* and *Leiophyllum* are said to be 2 or 3-celled and 2 to 3-celled (rarely 5-celled), respectively. Loudon describes the calyx of *Chamaedaphne* as "imbricate at base." Botanical descriptions can vie with "who-dun-its" any day when it comes to contradictory clues. *Clethras* have a very unusual geographical distribution, being found in America, E. Asia, and in the Canary Islands. *C. barbinervis*, the only Japanese species in the genus, has larger leaves than the more familiar North American *C. alnifolia* and is one of the smaller species, more suitable perhaps where space is limited. One outstanding virtue is that it produces its sweet-scented white flowers in paniced racemes late in the summer. It is growing with the *Pieris* and *Kalmias* to the north of Rhododendron Glen in the Arboretum.

Dr. Hiroshi Hara, in an article on the occurrence and distribution of rhododendrons in Japan, says "Rhododendrons, especially Azaleas, are one of the favorite flowering shrubs in Japan . . .". Ernest H. Wilson recorded a total of 25 species of Japanese rhododendrons and in 1927 Dr. Nakai listed 48 species. In the RHS "Rhododendron Yearbook" for 1948, Dr. Hara (University of Tokyo) gives the distribution and descriptions of 43 "wild rhododendrons," representing 7 series—*Azalea*, *Ponticum*, *Triflorum*, *Lapponicum*, *Dauricum*, *Semibarbatum* and *Camtschaticum*. We have Japanese representatives of five of these series growing in the U. of W. Arboretum. Dr. Hara considers *R. nipponicum* to be peculiarly distinct from the others, because of its strong resemblance to the genus *Menziesia*. Its pendent flowers hang in terminal umbels and the corolla is tubular-campanulate, creamy-white and 5-lobed. The leaves are large, obovate, and they have densely ciliate margins. It grows on mountains in northern Honshu.

Dr. Hara tells of a horticultural treatise, published in 1681, in which 147 names of garden forms of azaleas were listed. Certainly we are grateful to Japan for giving us the originals of many of our finest named varie-

ties—those allied to *R. Kaempferi*, *R. indicum* and *R. obtusum*.

R. Kaempferi is a very common wild azalea in Japan. Evergreen in milder climates, it is variable as to color, size of blossom, and botanical status. *R. Kaempferi* has been cultivated by gardeners of Kurume, Japan, for well over a century and it was there that the famous "Kurume Azaleas" were developed in all of their glorious forms.

The evergreen Indicum Azaleas trace their genealogy back to *R. indicum*, a native of southern Japan. It has been in cultivation for more than 300 years and about 200 different garden forms and varieties were recognized when they first came to the notice of Ernest Wilson. Their color ranges from salmon to deep scarlet. In most American nurseries these azaleas are given the name *macrantha* to distinguish them from the "Indian" Azaleas which are varieties of *R. Simsii* of southern China.

R. japonicum grows on the main island of Japan in situations similar to moorlands. Botanically it is considered to be a close ally of *R. molle*, *R. calendulaceum* and *R. luteum*. Its flowers appear before the leaves and range from yellow to flame-red. All of these Japanese azaleas can be seen in many forms and varieties along Azalea Way.

There are three small-leaved evergreen azaleas in Japan which are seldom seen in our country, but two of them are growing in the Arboretum—*R. serpyllifolium* whose botanical name proclaims it as the Thyme-leaved azalea, and *R. Tschonoskii Serpyllifolium*, with its rose-colored flowers and $\frac{1}{8}$ to $\frac{1}{2}$ inch leaves, is growing in one of the lath frames. *Tschonoskii*, with even smaller white flowers, has been growing near the head of the Glen for more than a decade.

One of the most desirable of the east Asian azaleas is *R. Schlippenbachii*, with fragrant, pure pink blossoms set so lightly upon the still leafless branches that they seem about to take flight. In the sun the leaves take on warm tones and draw together into cuplike whorls, while in the shade they are

green and carried almost horizontally. It was known to be a native of Manchuria and Korea, but also had been reported on two isolated mountains in the northern part of Japan. Dr. Hara says recent investigation has proven these reports to be erroneous and he feels it should be excluded from the flora of Japan, though it has been used in gardens there since 1660.

In the same subseries of the Azalea Series, we find *R. quinquefolium* and *R. reticulatum*. *R. quinquefolium*'s five whorled leaves have reddish margins, and its dainty white flowers with chartreuse blotches make it distinct and desirable. *R. reticulatum* (Syn. *R. rhombicum*) has diamond-shaped leaves that have a purplish tinge in the spring and again in autumn. It will be found blooming in April on the east side of Azalea Way, near the west end of Loderi Valley. In leaf, *R. Albrechtii* would appear to be closely allied to the above species but botanists place it with *R. Vaseyi* and *R. canadense*. Its rosy flowers are reminiscent of *Schlippenbachii* though they are not so large; they open early in April.

Two species of the *Dauricum* Series are to be found in Japan; the presence of scales on the deciduous, pointed leaves of *R. mucronulatum* and on the rounded, sometimes evergreen leaves of *R. dauricum* determines their status as rhododendrons and bars them from the Azalea Series. A large planting of *mucronulatum* brings visitors to the Arboretum soon after the first of the year (in mild winters) to glory in the cloud of rosy-mauve floating above the bed near the north entrance of Azalea Way. The more deeply colored flowers of *R. dauricum* burst forth almost as early.

R. camtschaticum is another of Japan's deciduous rhododendrons and husky specimens of this species are to be seen in the lath-house. One of these plants is giving us a second set of rosy-hued blossoms this summer. Dr. Hara says there is a white-flowered form which has been found on the high mountains of Hokkaido and the Kuriles.

(Continued on Page 120)

Barberries—in the Fashion Trend

EDITH H. BANGHART*

CLIMATICALLY speaking the parade of floral fashion is unstable and often erratic. Yet there IS fashion in the garden, and certainly it has been demonstrated it is on a par with other changing waves of vagrant progress.

One does not consider this possible in viewing our expression of nature. One could hardly expect that "fashion" could influence plant material. But it does, and equally with other discernible changes, people and gardeners become victims of the changing whims of nurseries and propagators, and certainly not the least, of their neighbors and kindly friends.

The richness of the plant material offered these days is so vast and profuse, that one's ordinary mind can comprehend only a trifling fragment of the whole ensemble of growing things.

In fact much of the present day conventional picture centers around residual acquisitions of a Mrs. Brown or a Mrs. Smith, and specimens of plant material they are growing in their gardens seem to influence the desires of some, so much so, that without respect to location or environment or suitability, they just MUST have this or that in their own garden, or become faint in the effort to obtain it.

Changing tastes may govern the majority, perhaps, but the minority will be slow in allowing just the popularity of certain plants at the moment to influence their vision.

The careful gardener is always on the lookout for shrubbery that will respond to ordinary good care and which will, at the same time, create the best effects in habits of growth—in foliage and flower, in fruits and autumnal coloring, and of course, in upkeep and maintenance, which is important.

So, therefore, it is more or less a local

trend that influences the passing fancy, for certainly these types, too, grow, flourish, and like the Arabs silently pass away, quite frequently without leaving even a remnant of their influence.

Not so the Berberis, however. They are an old and reliable standby.

A decade or so ago, the barberries reigned in supreme array, for they are older than England herself, and who of us cannot recall the picture in our grandmother's garden, of long rows of the lovely *B. Thunbergii*, with its rich red and bronzy foliage, colorfully bordered on either side with low growing, deep blue canterbury bells—and the vivid orange and yellows of the ever popular marigold. This cheerful greeting would line the pathway up to the "welcome" mat at the front door of many a low swung cottage—and it mattered not what the colorful picture might be otherwise—always there would be the barberries.

There was, and is, a reason for it. Among the long list of suitable garden material, the barberries stand out as ranking well near the top, for their perfect practicability at a minimum of labor, upkeep and permanence.

While the flowers of most of them are, in the early spring and summer, more or less inconspicuous, the fruits of nearly all are highly decorative and ornamental; the gorgeous colorings of reds, blues and dark purple berries lasting well into the winter months.

Their foliage, too, is often handsome. Many species assume the most brilliant autumn tints—unbelievable in their beauty, and when intermingled with other suitable shrubbery, that really belongs and is focused to the scene, they provide a picture of naturalistic and charming distinction, glistening highlights, and unusually beautiful and satisfying effects in an otherwise somber outlook.

The barberries have a wide range of world coverage.

Many types hail from China, Japan, and Korea. Others are from southern Europe and

*Mrs. Banghart will be remembered for other fine articles in the Bulletin: "Shade Loving Shrubs," Summer 1949, and "Larger Leaved Cotoneasters," Fall 1952.

western Asia. India and the Himalayas have given us some beautiful varieties, and we are greatly indebted to the late Mr. E. H. Wilson and to Mr. Kingdon-Ward for some of the best imports. Fine forms, too, have come home from South America and the Andes—a goodly number being listed by number only and not yet for distribution to the trade.

Most of the species are completely hardy (although in Northeastern areas the winter's extreme cold does have damaging effects on the leaves of some of the evergreen varieties), but it is determined that such types as *B. Sargentiana*, *B. buxifolia*, *B. verruculosa* and several others, do quite well in regions as far north as Massachusetts.

To secure the best results with most of the barberries, they should be planted in slightly moist, light loam, well drained, although those deciduous types that drop their leaves in winter prefer a rather dry location.

The *Berberis* family germinates quite easily from seed. The seeds should be separated from the pulp—by squeezing or macerating processes, and sown in flats in cold frames, or they can be broadcast in outdoor beds in the fall of the year. They will then germinate the next spring.

Many of the species can be propagated from green cuttings of the young wood taken early, in and up to the end of June. These should be placed in sand in a shaded hotbed, where one would strike cuttings of weigelia, lilacs, forsythias, etc.

It is true that the barberries have met with some detrimental criticism due to the wheat stem rust—*Puccinia graminis*—and many of the finest species have been under quarantine and observation for some time only a few being released periodically.*

Naturally it has been prohibited that they be grown in wheat-growing districts, although it has been found recently that destroying the *Berberis* did not check the wheat rust, and it was concluded, therefore, that most probably it was being spread by other media as well.

*See "Testing Barberries for Resistance to Stem Rust"; Arb. Bull., Winter 1955.

Formerly *Mahonia*, of which Northwest America has given us some fine types, was included in the *Berberis* genus. Now, however, it is listed separately, for while the *Berberis* generally have spiny stems and simple leaves, the *Mahonias* are mostly spineless and have pinnate leaves, although several species have holly-like foliage with quite prickly leaves. The *Mahonias* are evergreen, but in several varieties their leaves, like the *Berberis*, turn a brilliant color in the autumn.

Such authorities as Rehder, Bailey, and others, list literally a hundred or so varieties—hybrids and species—but I can only in a limited space outline a few of those I consider good and lasting material for endurance and association with other shrubs of a choice nature. Some of these may not be available at this time in nurseries, due either to not being released from quarantine, or in too small quantities to be circulated until stock has been increased, and too, many of the best specimens suffered sadly in the freezing weather of the winter of 1955.

Those suitable for the rock garden (and there are some lovely types that can be utilized in this respect), I shall append at the end of this summary; also the *Mahonias* will be outlined separately following the list of barberries.

BERBERIS SPECIES AND HYBRIDS

*AGGREGATA—From W. China. Heavy berrying bush of fine form. 5-6 ft. tall.

*ANGULOSA—From the Himalayas; unusually large flowers, berries are edible. 3 ft.

BEANIANA—From W. China. Handsome foliage, with brilliant autumn coloring. Berries purple. 6 feet.

BOUNTIFUL—Hybrid of *B. Wilsoniae*—spreading bush laden with beautiful coral-red berries on arching branches. Very fine.

BUXIFOLIA (dulcis) (E)—Earliest of the spring blooming barberries. From S. Chile.

CALLIANTHA (E)—Low growing shrub with holly-like leaves, white beneath. Flowers and fruits large. S. E. Tibet. 3 feet.

*Susceptible to stem rust.
(E) Evergreen

CHILLANENSIS — From Chile. Lovely large flowers of bright yellow and orange. 6-8 feet.

COXII (E)—From Upper Burma. Handsome type with lustrous leaves, white beneath; the attractive berries are purplish black. 6 feet.

DARWINII (E)—From S. Chile. High ranking shrub with profusion of orange flowers in April and blue berries. 8 feet.

FORMOSANA (E)—From Formosa. Fine form with attractive foliage; fruit with white bloom. 4 feet.

GAGNEPAINII (E)—W. China. Clusters of pale yellow flowers followed by black berries; fine for hedges or barriers. 8 feet.

*HENRYANA—From Central China. Very striking species with long leaves, attractive oblong berries.

*HYPOKERINA (E)—From Upper Burma; very long holly-like leaves; berries are dark blue, with attractive white bloom; this handsome bush is one of Kingdon-Ward's fine contributions. 3 feet.

*HOOKERI (E)—Himalayas. Very dense, rounded bush with attractive foliage, yellow flowers and almost black fruits. 5 feet.

JULIANAE (E)—From C. China. Handsome foliage, long spines, attractive whitish berries. Upright habit, 8 feet. One of the hardiest evergreen species.

KOREANA — From Korea. Beautiful leaves highly colored in the fall. Red berries. Similar to *B. vulgaris* but rust resistant.

LINEARIFOLIA (E)—From Chile. Beautiful species on order of *B. Darwinii*. Flowers orange. 6 feet.

LOLOGENSIS (E) — (*Darwinii* X *linearifolia*). A beautiful natural cross with lovely apricot flowers, purple berries. 5-6 feet.

MONTANA—From Chile. Arching sprays with orange-yellow flowers. 5-6 feet.

*ORTHOBOTRYS — Beautiful oblong scarlet berries, very fine autumn coloring.

*RUBROSTILLA (a Wisley hybrid)—Semi-weeping variety with masses of very large red berries—highly colored foliage in the fall. 4 feet.

SARGENTIANA (E)—From C. China. Handsome, vigorous specimen, with long spines and large shiny leaves. 6 feet.

*SIEBOLDII—From Japan. Rare and beautiful species. Foliage turning vivid red in fall. 3 feet.

STENOPHYLLA autumnalis (E) — One of the loveliest of all barberries. Blooms in the spring and again in the fall. 3-4 feet.

STENOPHYLLA corallina—Fine reddish flowers. 4-6 feet.

STENOPHYLLA gracilis—More slender branching; flowers yellow.

STENOPHYLLA semperflorens — Blooms continuously during the year.

THUNBERGII—From Japan. One of the oldest and best of the barberries. Beautiful crimson foliage. 4 feet.

THUNBERGII atropurpurea — Finest purple-leaved variety; pale yellow blossoms.

*YUNNANENSIS—From Yunnan. Brilliant autumn foliage—handsome red berries. 5 feet.

MAHONIA SECTION

The mahonias have mostly handsome shiny foliage and thrive best in a shady location. All are evergreen.

AQUIFOLIUM — Northwestern America. Holly-leaved species; fine yellow blooms in April, purple fruits, July to August.

AQUIFOLIUM Moseri—Brilliantly colored form.

BEALII—One of the finest of the flowering mahonias; upright racemes of sweet-scented yellow blossoms. E. China. 6 feet.

*FREMONTII—Handsome glaucous foliage; found in southwestern U. S. Berries dark blue. 8-10 feet.

FORTUNEI—From C. China. Very distinct dull green narrow foliage. 4 feet.

JAPONICA—Handsome foliage and beautiful sprays of fragrant yellow blossoms. Native in N. E. China; cultivated in Japan. 6 feet.

LOMARIAEFOLIA — From S. W. China. Superb foliage; needs some shelter as it

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For More Productive Relations with Nurserymen

HAROLD T. HOPKINS*

IN most of the more attractive gardens there is a history of happy relations between the home owner and a good nurseryman. The satisfaction and beauty that can be produced cause one to wish that such relations would prevail even more often. Because beautiful gardens in a community increase his business, the nurseryman is happy to sincerely cooperate in creating the finest results. However, in many contacts between home owners and nurserymen there are several handicaps to overcome. Time is a big problem and what the weather does to it!

Some cool, brisk day the forehanded gardener steps out of a 70-degree house into a comfortable, air-conditioned car and shortly alights in a windswept suburban nursery. Unless one is especially dressed for it, ten or twenty minutes in this vigorous atmosphere is about all the body can endure. That doesn't allow time to see all the varieties that are possible and make many decisions unless the gardener has a pretty precise idea of just what is wanted.

Postponing the visit until warm weather is no answer either, for then the nurseryman is too rushed to give more than the briefest of help. When people who know just what they want are waiting for a salesman, he is unlikely to devote much time to those who are unsure of their needs. Then, too, by warm weather the nursery's stock is less complete. The selection is usually best in the colder seasons. So, if a visit to one of your favorite nurseries is to be productive for you, some preparation will help. Of course, warm clothing—more than just an additional sweater—is also useful.

It is remarkable how much time people waste in nurseries because they do not know some of the fundamentals of plant life, for example:

*Mr. Hopkins, of the Hopkins Nursery, is the immediate past president of the American Association of Nurserymen, Chapter 28. He brings us an article the *Bulletin* has long desired.

1. A deciduous shrub or tree loses its leaves in winter but still can be excellent screening material because of the quantity of branches and twigs.

2. Broadleaf evergreens are *evergreen*. How often after telling a young gardener that a rhododendron is a fine evergreen, we are told, "But I want something that keeps its leaves on all year."

3. How a tree grows. So many people fail to realize that those branches will always leave the trunk at the same height from the ground. The existing branches gain in diameter but do not stretch in length; new growth proceeds from buds usually located near the ends of the branches.

4. How a shrub grows. People waste precious time considering the shape of a forsythia, lilac, cotoneaster or mock orange, little realizing that new growths from the base will completely alter the shape in a season or so.

5. You will almost always receive an unsatisfactory answer when you ask a nurseryman how big a tree grows. Really, does it matter to you how large that cute little arborvitae will be in 300 years? Rather, ask how much it grows per year, or better yet, learn how to tell for yourself by looking at the tree. You know, much of a tree's history is readily apparent on its trunk and branches.

6. How tall a tree or shrub is needed to screen an undesirable view? Let one person look out from the house while another stands or holds up a broom or hoe where the tree is to be planted. Such measurement can assure selecting a tree that better fits the needs.

7. Perennials die down to the ground in winter but do come up again in spring, at about the same time as the weeds.

8. Annuals have to be replanted each spring, but that isn't as bad as it sounds because it is done after weed growth has slowed down a

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Trees for Small Northwest Gardens

At this season of the year it is appropriate for those who contemplate planting trees in the near future to consider what are the best varieties to use. We hope that these articles, requested from authoritative sources in the several cities, will be helpful in making a choice of material; the authors cover a wide range.

CLARENCE PRENTICE*

TREES are so much a part of our life here in the Pacific Northwest that we seldom give thought to their preservation. Subdividers are prone to recklessly bulldoze all existing trees in order to re-contour their building sites. Groves and forests which have taken decades to grow are destroyed in a day and replaced by long straight rows of "boxes" called a "development."

Subdividers all too often try to squeeze as many houses as possible onto a tract. The result is small, crowded yards. Naturally we must choose our trees to fit these conditions.

The birch (*Betula*) family is a good place to begin in any list of trees. Two that seem to be well adjusted to our local conditions are the cutleaf weeping (*Betula pendula dalecarlica*) and the fastigate or pyramidal birch (*Betula pendula fastigiata*). These two varieties can be planted either singly or in groups. The winter effect of the white bark (which they both have) plus the branch formation is highly decorative. They grow well in either sandy or clayey soils and are able to stand the excessive water used on the average lawn.

Among the beeches (*Fagus*) we will consider the weeping greenleaf variety (*Fagus sylvatica pendula*). This is not a rapid grower but its main interest is its fantastic habit of growth. It seems to have no set form or character. Limbs will grow straight up and then all at once a horizontal branch will form and head right for the woodshed. The "Salvadore Dali" appearance of this tree can be used with the contemporary house. The beech likes a loamy soil, not too wet, and a little on the alkaline side of the pH scale. Do not plant them with peat moss but in-

stead give them some ground agricultural limestone.

The maples (*Acer*) make up a group of very ornamental trees. The oriental (*A. palmatum*) series range from small trees to dwarf shrubs, many with lovely lacinated foliage which varies in color from gold to blood red to many shades of green. These have a definite place in the garden.

Our native vine maples (*Acer circinatum*) can be exotic small trees with lovely foliage and fine fall coloration. They need a sandy, well-drained soil kept on the dry side.

The red maple (*Acer rubrum*) bears red flowers in the spring before the leaves come out. It makes a nice shade tree and will grow in wet situations unlike most other maples which are dry-landers.

The trident maple (*Acer Buergerianum*) is rather new to me, but it promises to be one of our best. It is a small tree which grows readily and is not fussy about its conditions—they tell me it is the variety used in Japan for dwarfing (or Bonsai) dish gardens. The trident maple has marvelous fall coloration varying from shrimp-pink to auburn.

The oriental cherries (*Prunus*) adapt themselves easily to the small garden but they do not like clayey soils and they must have good drainage. The November 1955 freeze was rather hard on them, particularly the *P. serrulata* forms. The *Prunus subhirtella* forms proved tougher and were not as readily killed.

Some of the best flowering cherry varieties for the garden are Shogetsu, Shirotae (Mt. Fuji), Whitcomb, Naden, and *autumnalis*. There are a number of other kinds showing great variation in color of flower and habit of growth. There is a form to suit nearly every gardener.

Most crab apples (*Malus*) are nice low-

*This article was contributed shortly before the untimely death of Mr. Prentice, well-known and respected nurseryman in Seattle.

growing trees suitable for small gardens. *Malus Sargentii* is one of the more dwarf forms. The cherry crab (*Malus robusta*) is a vigorous upright grower with a beautiful show of fruit, some years the fruit will hang on until March.

The crab apples, like the flowering cherries, are a large and variable group. Here again we have habits of growth, color of flower and foliage, and fruit to suit nearly all gardeners. Crab apples will grow in clay if necessary and will tolerate wetter conditions than the cherries.

Another group of trees I would like to mention for Northwest gardens are the pines (*Pinus*). They will grow very well here.

The Pines are dry-landers, they do not like clayey conditions and they want good drainage. (An exception is *Pinus pungens* which seems to stand clay better than most pines.) They can be trained or tortured into almost any effect desired. They can be made to represent a forlorn tree on a ridge which has been blown and broken by snow. They can be dwarfed and grown in dishes and tubs for porches and patios. They can be used in

rockeries as specimen plants. Finally, pines make fine screen plantings for the small house.

Rhododendrons can also be used as trees. They are slow growing and it takes a long time to form and trim them into a tree but they are quite effective.

Trees which are properly planted give glamour to architecture. The beautiful cities of the world are those cities which have lovely old trees.

I have named only a few; there are many more fine varieties of trees for home and street planting.

In closing I would like to ask people reading this article to support a movement to establish a greenbelt at least one hundred feet wide on either side of the proposed freeway which will be going through our downtown Seattle area. This public highway can either be beautiful with trees and plantings or it can be a mean, ugly gash of concrete and cut banks.

We must all help protect the natural beauty of Seattle by helping to beautify our homes, streets and thoroughfares.

Trees for Portland Gardens

ERNEST E. FISCHER*

DUE TO the abundant rainfall (average 39.43 inches) and mild climate in the Portland area, gardeners can be really "choosy" in selecting trees for landscaping their home grounds. In selecting the proper tree, it is important to take into consideration two factors—rate of growth and eventual maximum size. Thus such trees as our broad-leaf maple, the ailanthus, the true cedars, and most of the true species of pine, fir, hemlock and spruce are eliminated because these trees eventually become too huge for the average garden.

The following trees have been selected as being ideal for Portland gardens in that they do not become overwhelmingly large, are

mostly slow growing and all survived the freeze of '55. These trees fall naturally into three classifications, namely, the deciduous, the needle-bearing and the broadleaved evergreens.

There is no finer picture in a town garden than when the dogwoods are in bloom, especially if a background of coniferous trees is provided. Our own Pacific dogwood is tops insofar as size of "bloom" is concerned, but the Japanese species (*Cornus kousa*) which blooms several weeks later is highly desirable for this region. The latter has clusters of tiny flowers surrounded by four-pointed bracts which sheet the horizontal planes of the branches with snowy white. In the fall this tree has bright red fruits hanging from the branches which are quite attractive. The

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Japanese dogwood is especially effective when planted so one may look down upon its rare beauty.

The sorrel or sourwood tree (*Oxydendrum arboreum*), which attains a maximum height of about fifty feet, is a North American native. It does best in acid soil. White flowers in the summer followed by scarlet foliage in the fall puts this tree on the "excellent" list for Portland gardens. It is also shade tolerant.

No garden is complete without a magnolia, and a large number of species of this beautiful tree are suitable in this area. The starry magnolia (*M. stellata*) is a bush or small tree with sweet-scented white flowers and often blooms when only a few feet high. Other suitable species are *M. Soulangiana* with large creamy white flowers appearing in April and with a maximum height of twenty-five feet; *M. macrophylla*, the large-leaved cucumber tree, is very exotic appearing with huge leaves and fragrant ten-inch flowers late in June. This tree should be planted in a protected location since the leaves have a tendency to shred if exposed to strong winds; *Magnolia Kobus* and *M. Sieboldii* (*parviflora*) are also suitable for the Portland area.

The Persian silk tree (*Albizia Julibrissin*), with its delicate foliage and pink blossoms is outstanding in any yard. Rarely exceeding thirty feet in height, this handsome tree with acacia-like foliage withstands draught quite well. The leaves of the silk tree "go to sleep" or fold up at night.

The Japanese pagoda tree, *Sophora japonica*, is well worth its keep because of its dainty foliage and white blossoms hanging in long terminal panicles. These trees thrive best in well-drained soil and will tolerate dry soil conditions. It is a late bloomer with flowers appearing from July to September.

Cotinus coggygia, commonly called the smoke tree, is deserving of a place in local gardens for its attractive feathery panicles as well as its brilliant foliage in autumn. They prefer a sunny location with well-drained soil and are adaptable for dry and rocky ground.

Koelreuteria paniculata, the China tree or

Pride of India, is outstanding among garden trees because of its large panicles of yellow blooms as well as its beautiful compound foliage. Maximum height is about 30 feet. They are not particular as to soil conditions but prefer a sunny location.

The Carolina silver-bell or snowdrop tree, *Halesia carolina*, with its drooping bell-shaped flowers is very attractive in the spring. Not particular as to soil requirements, it does like a sheltered location. Maximum height is about forty feet.

The clerodendron (*C. trichotomum*) is a handsome small tree occasionally reaching a height of twenty feet. Its white flowers in August are strongly scented. The blue fruit, which is a drupe enclosed in the calyx, is also quite attractive. Its habit of sprouting from the root is often annoying and some gardeners are not favorably impressed with its strongly perfumed blooms.

Broadleaved evergreens recommended for Portland gardens include the golden-leaf chinquapin, our own Oregon myrtle and the South American fire-bush tree. The golden-leaf chinquapin, *Castanopsis chrysophylla*, a native of the higher elevations, is really outstanding as a garden subject, but due to difficulty in transplanting from the wild, very few are seen in Portland gardens. It stands clipping well and can be kept within bounds in a small garden. The leaves, which are glossy green above and golden below, are very attractive. The fruits are small hazel-like edible nuts enclosed in a spiny involucre. This handsome tree requires perfect drainage, which probably accounts for the lack of success among most gardeners.

Our native "myrtle" (*Umbellularia californica*) is a fine evergreen with dense foliage and erect slender branches. The leaves contain an oil which gives it a pleasant, aromatic odor. A noted authority on trees describes this native as "one of the stateliest and most beautiful inhabitants of the North American forests." Contrary to popular belief, this tree is not related to the true myrtle (*Myrtus communis*) of the Holy Land.

The South American fire-bush tree (*Embothrium coccineum*) survived the freeze of '55

in the Hoyt Arboretum and should be seen in more Portland gardens. This native of Chile with its leathery leaves bears dense racemes of showy scarlet flowers in late May or early June which are outstanding in any garden.

Among the needle-bearing trees the majority of the genera are not suited to the town garden because of their tendency to become over-size in a short time. Thus most of the conifers adaptable to the home garden are limited to nursery varieties. Some exceptions are the Japanese plum-yew (*Cephalotaxus*), the China

fir (*Cunninghamia*), the Spanish fir, the tiger-tail spruce, the Santa Lucia fir and the California nutmeg (*Torreya californica*).

The ginkgo or Chinese maidenhair tree is one of the most picturesque of all trees and is suited for the home garden. Its unusual fan-shaped leaves are its chief attraction. Sometimes called the "living fossil," this tree is very slow-growing. Several in the arboretum twenty years old are only eight feet tall. One should get the male tree if possible since the female tree produces a fruit which when ripe has a very foul odor.

Good Trees for Small Northwest Gardens

WILLIAM R. NELSON, JR.*

IF AN accurate tally were kept of the questions most often asked of the Finch Arboretum staff, without a doubt the question of what type of tree should be planted would exceed all others. In attempting to answer this question, the trees recommended are evaluated on the basis of their hardiness in this inland region, their tolerance of the alkaline soil conditions in which they must exist, their freedom from disease and insect problems, and their ornamental value in the home landscape. There are, of course, certain trees that have outstanding ornamental qualities for a shade tree that are recommended even though they have minor insect or disease problems. In general it is felt that these trees are so worthwhile that the small amount of work required to control the insect or disease is justified.

The trees listed below have been evaluated on the above basis and are considered worthy of planting in your garden. It should be pointed out that a tree can continue to live up to these standards only if it receives adequate attention after it has been planted. In other words, a regular watering, fertilizing and pruning program is essential not only for the first year but every year thereafter. Such a program will reward you with vigorous, healthy and attractive trees.

Space does not permit a complete list of the trees that could be recommended for small gardens east of the Cascades; however, those listed below have proven themselves valuable trees for small properties.

The flowering crabapples are extremely useful because of the wide selection of varieties available. They are planted for their abundance of flowers, which usually appear in mid-May, and for their autumn fruits which add a great deal of interest to the fall landscape. From this group, which ranges from 8 to 30 feet in height, you may choose the habit of growth that best fits your landscape needs, whether it be mounding, spreading or upright. In general, crabapples require a minimum of attention but pruning and spraying should be done regularly to insure good growth.

Some of the popular varieties are the Eley crabapple (*Malus purpurea Eleyi*), Scheidecker crabapple (*Malus Scheideckeri*), Charlotte wild sweet crabapple (*Malus coronaria Charlottae*), Bechtel crabapple (*Malus ioensis Bechtel*), Hopa crabapple (*Malus Hopa*), Sargent crabapple (*Malus Sargentii*) and Parkman crabapple (*Malus Halliana Parkmanii*).

The flowering dogwood (*Cornus florida*) is an excellent tree with white or pink flowers in early spring, good foliage throughout the

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summer and beautiful coloring in the fall. In small garden areas the flowering dogwood seldom grows over 20 to 25 feet in height. The horizontal branching habit of the tree lends itself well to the popular ranch style of architecture. In general, this tree has been comparatively free of insect and disease problems; it will tolerate only slightly alkaline soils and demands good drainage.

The cornelian cherry dogwood (*Cornus mas*) is spreading in its habit of growth and attains about 25 feet in height. This plant produces minute yellow blossoms in March before the leaves appear, followed in August with attractive red fruit which is frequently used for jellies. This dogwood is most effective when planted in a shrub border against an evergreen background.

The star magnolia (*Magnolia stellata*) is valued chiefly for its showy white flowers (3 to 4 inches across) which provide an attractive display in mid-April. This relatively slow growing tree has a maximum height of about 15 feet and is somewhat shrubby and dense in habit. Additional interest is provided in the attractive bronze coloring in autumn, particularly when grown in direct sun.

The Saucer Magnolia (*Magnolia Soulangiana*) is a popular tree in this area because of its large, showy flowers that range from white to deep purple, depending on the variety. These flowers appear before the leaves. The large leaves and the large flowers give this tree a coarse texture which makes its use on small properties somewhat difficult. The plant should not be located near architectural features such as your home unless the siding is large and coarse. Preferable location would be in a rear shrub border. This magnolia is usually 20 feet high and is spreading in habit.

It should be noted that magnolias have very fleshy root systems which require them to be balled and burlapped when transplanting. Transplanting in this region is best in the spring after active growth has started. Magnolias in this area are free of any serious pest problem, particularly when they are kept in a healthy, vigorous condition.

The English hawthorn (*Crataegus Oxyacantha*) is one of the most desirable trees for yards and street plantings. The hawthorns are medium size trees growing to 20 feet, successful in any well drained neutral or alkaline soil. The English hawthorn is available in single white and red as well as double white and double red flower forms. The latter have the disadvantage that they do not produce the red fruit which is typical of such species as the Washington hawthorn (*Crataegus phaenopyrum*). Aphid infestations appear to be the only pest problem and this is easily controlled by spraying at the first sign of their presence.

The Sargent cherry (*Prunus Sargentii*) is seldom seen in the inland areas but it is a tree which deserves much wider use. A large growing tree, to 45 feet, the Sargent cherry is useful where an upright, somewhat columnar type tree is desired. The flowers are single, pink and very abundant, appearing in early spring. The leaves in early spring are a colorful bronze, later turning to green, and in autumn provide a spectacular display of scarlet and crimson shades. There do not appear to be any serious insect problems and pruning is limited to the cutting out of broken and dead branches.

The European mountain ash (*Sorbus aucuparia*) is another of our prized ornamental shade trees. The conspicuous flowers, colorful fruit and attractive autumn color make this 45-foot tree highly desirable for small properties. Mountain ash plantings are susceptible to scale infestations which can be controlled with dormant oil sprays applied in late February or early March. Fortunately the borer which has plagued these trees in the east is not a problem in Spokane. The mountain ash is not particular as to soil type.

The small-leaved linden (*Tilia cordata*) is considered one of our best shade trees and is highly recommended for street plantings. A slow growing tree to 45 feet, this linden is dense in habit, growing into a tight pyramidal form. Aphids appear to be the only insect problem. The ability of this tree to withstand low temperatures is an important factor to

consider for those living in the colder areas east of the Cascades.

The thornless honeylocust (*Gleditsia triacanthos inermis*) is a good shade tree that adapts itself well to many difficult conditions. It bears long seed pods which persist on the tree far into the fall; however, a newer variety, the Moraine Locust, does not develop fruit pods. Neither of these varieties is subject to the borers that attack the true black locust. The fine texture of the leaves and the open habit of the tree gives a very pleasing, filtered shade. These are large trees that are suited for planting in the rear yard or in large front lawn areas.

The Amur maple (*Acer Ginnala*) is a dense, 20-foot tree whose fruits turn a bright red in summer while the leaves are still green. This

tree is useful as a specimen plant. It requires little attention other than good cultural practices.

The Norway Maple (*Acer platanoides*) is a tall growing shade tree with a wide, rounded habit and dense foliage under which it is sometimes difficult to keep grass growing. This tree is not suitable for planting in narrow parking strips. Aphids are usually found on the Norway Maple so that a definite spray program is required.

The Japanese Maple (*Acer palmatum*) is available in several different varieties with leaves ranging from green to dark red. The different forms are variable in height but seldom grow beyond 20 feet. Their foliage is dense and the habit of growth is rounded or somewhat mounding. They are best used for specimen plantings.

Good Trees for Small Gardens— Southwestern British Columbia

J. W. NEILL*

BRITISH COLUMBIA is such a vast Province, displaying a great variety of growing conditions, that it is not a simple matter to suggest a group of trees well suited to the small garden in all regions. This discussion will, therefore, be limited to trees adapted to the conditions of the southwestern portion and particularly to the cities of Vancouver and Victoria.

The factors which affect the selection of garden trees may be divided into two groups: the natural conditions, climate and soil; the artificial conditions, those imposed upon us by the urban environment, and those considerations which may be termed aesthetic, as they are related to the role of trees in garden design.

The climate of southwestern B. C. is typically coastal-marine, characterized by fairly cool, dry summers and moderate, wet winters. Victoria can boast of more hours of sunshine each year, with only half the rainfall of her

big sister, Vancouver. The latter city is close to the Coast Range of mountains and receives a good share of cloud and moisture as the Pacific storms come down out of the Gulf of Alaska and cross the coast at this point. Gardeners in Victoria like to think that tender plants are safer with them and it is true that many Zone 8 trees and shrubs are to be found there. Vancouver gardeners are content to limit their choice to safe Zone 6 and 7 material. The soils of the entire region are glacial in origin, somewhat more gravelly and less fertile in Vancouver. All are slightly acid.

On the city lot it is necessary to select trees that are not too large in order to allow them to reach maturity without severe pruning. This point cannot be stressed too much because there are many outstanding examples of "tree butchery" and subsequent loss of natural beauty of many trees on the city streets and surrounding the city homes. They must be chosen to be compatible with the architectural features of our houses and must be placed so as not to interfere with the all-important

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views of mountains and sea, so much a part of the way of life of any coastal city. Careful placement may often improve the view through the creation of vistas. Trees must be selected with more consideration for form and texture, to provide just the suggestion of overhead canopy, for dense shade is seldom required, and to provide a landscape architectural tie with the interesting forms and structures being used in West Coast home design.

The following list of trees is not intended as "the best 12." Such a list would be too difficult to prepare and would not even then satisfy everyone. It does include, however, a number of trees that are admirably suited to garden use in southwestern British Columbia, and it does provide a sufficient variety in form and texture to suit a wide range of requirements.

Deciduous Trees

Acer palmatum atropurpureum. Visitors to Vancouver and Victoria cannot help but comment on our many beautiful specimens of Japanese maple. It is unsurpassed for a small tree with distinctive character for the narrow boulevard and small lot. It seeds quite freely here and some gardeners have made the mistake of growing it from seed. Few seedlings have the beautiful blood red coloring of the variety throughout the season. The best forms are grafted, or propagated by cuttings under mist. It is comparatively free from insect and disease problems and, like all the maples, is quite easy to transplant. It should be allowed room to develop to its full 25-foot height and spread.

Carpinus Betulus fastigiata. This severe columnar tree should be more widely used. It is not so fast-growing as the Lombardy poplar and does not attain its size. This makes it more suitable for home use. It will eventually attain a 35- to 40-foot height, but remains narrow, having only a 6- to 8-foot spread at maturity. All varieties of the European hornbeam hold their leaves well into winter, displaying an attractive golden yellow coloring. They are amenable to clipping and can be kept to any size without spoiling the natural effect of the tree. They have no serious insect or

disease problems in this region. While all hornbeams, like the beeches, prefer alkaline soil, the acid topsoil here is not a limiting factor.

Cercis Siliquastrum. The Judas tree is one of our loveliest spring-blooming trees. Flowers are a bright purplish-rose in April, before the leaves appear. This tree may be grown as a low, rounded standard, up to 25 feet, but often it is shrubby in effect. Leaves are heart-shaped, larger than the eastern native redbud. It should have a sunny location in the garden for best flower effects.

Crataegus Lavalleyi. This hawthorn is not as well known as the May tree, but it should be more widely used. It is a handsome upright tree, to 30 feet. Flowers are large and white, followed by large, red, persistent fruit. Leaves of Lavalley's hawthorn are bright and shiny, almost evergreen. It is not so susceptible to the diseases and pests of other species.

Davidia involucreta Vilmoriniana. The handkerchief tree, more recently called the "Kleenex tree," is gaining popularity in this region. There are several fine specimens in Vancouver and Victoria gardens, where they flower well and bear fruit. It is the "flower," a large creamy white bract appearing in May, that gives it its common name. Throughout the season, however, this is an attractive, upright tree, with bright clean foliage. It is perfectly hardy here. It may be propagated by seed, but the variety is best grown from cuttings. Rate of growth is moderate, the tree ultimately reaching 40 feet in the garden. It has promise as a good street tree.

Laburnum Watereri. No list of garden trees for southwestern British Columbia would be complete without the laburnum. Thousands of these bright yellow flowering trees add color to our cities in late May and early June. It is grown as a small standard tree to 30 feet. Flowers are produced in long, yellow chains, giving it the common name of golden chain tree. This hybrid between *L. anagyroides* and *L. alpinum* is better than either species, in that few seeds are produced, making less mess in the garden. It should be propagated by cuttings or it may be grafted on to seedling

stock of the common laburnum.

Prunus Blireiana. This is a hybrid between *P. Mume* and *P. cerasifera atropurpurea*. It differs from the latter, the Pissard plum, in that the leaves are larger, not quite so dark in color and the flowers are deeper pink and semi-double. It is less oppressive, too, than the Pissard plum, which has been overplanted along city streets and in home gardens. It should be chosen where dark foliage is required throughout the season, more than for its flowering effects, for they are all too short. It is particularly lovely when grown in association with the lighter foliage and texture of such trees as willows and birches.

Sorbus aucuparia pendula. A weeping tree rounds out this all-too-brief list of deciduous trees for the garden. Some people complain about the mess of fruit from the Mountain Ash. This smaller form may be the answer, for these are all beautiful trees, adding an extra color interest to the garden, even after the brilliant fall leaf display of reds and browns, right into winter. The orange or red clusters are persistent until the heavy frosts of January. This variety seldom grows higher than 25 feet, with a modest spread and is a good choice where a pendulous effect is called for in the design of the garden.

Evergreen Trees

Cunninghamia lanceolata. The China Fir is a very interesting tree, possessing some of the unusual characteristics of the *Araucaria*, yet not so severe in its form. It has proven to be perfectly hardy on the campus of the University of British Columbia, suffering only small branch damage in the severest winters. It is slow growing, with a broad pyramidal habit. It is one of the few conifers which will sprout from the roots and stump if cut back. It prefers a sheltered position in the garden, with a deep, well-drained soil.

Pinus densiflora umbraculifera. This variety of the Japanese Red Pine is a good tree where a dense, round head is desired. It forms an umbrella-like head, hence its common name, Japanese umbrella pine. It seldom grows over 15 feet in height. It should be perfectly hardy throughout the region, but suffered severe

damage in the November 1955 freeze.

Sciadopitys verticillata. This is also called the Umbrella Pine, but is quite unrelated in form. It is a handsome, slow-growing tree of dense pyramidal habit. It grows to a great height in the forests of Japan, but can be considered a modest 40-foot tree when grown as a lawn specimen in the garden. It prefers a moist, rich, slightly acid soil and, like most Japanese trees, is well suited to the region.

Tsuga Mertensiana. Our own mountain hemlock, from the higher elevations of the Coast Range in B. C., should be infinitely more popular than it is. It is a small tree, of dense conical habit, very slow-growing, eventually reaching a maximum height of but 20 feet. At all stages of growth it is attractive and may be used as a slow-growing evergreen shrub for foundation planting or as a free-standing lawn specimen. The mountain hemlock is perfectly hardy and free from insect and disease troubles.

✓ ✓ ✓

Summary

In the four preceding articles some 63 trees belonging to 33 different genera are named, yet only five of them occur in more than one list—a somewhat surprising result. They are the Japanese maple (*Acer palmatum*), China fir (*Cunninghamia lanceolata*), two magnolias (*M. Soulangeana* and *M. stellata*) and one crab apple, the bushy *Malus Sargentii*.

This analysis seems to indicate that (a) a large variety of satisfactory trees can be grown in and is recommended for this region; (b) that from the material suggested by our authors trees can be selected for spring and summer bloom (magnolias, crab apples, cherries, dogwoods, hawthorns, laburnum), for shade (most of the preceding, plus the small-leaved linden, *Tilia cordata*), for fall color (maples, Sargent's cherry, dogwoods, ginkgo, sourwood), for fruits (crab apples, mountain ash, hawthorns), and finally coniferous evergreens for winter decoration (firs, pines, the China fir, mountain hemlock, etc.)

From amongst all these we hope you will be able to obtain what you prefer.

Some Promising New Small Trees

J. W. WITT*

ONE of the major functions of an arboretum is the introduction of new plants to the area which it serves. These introductions may be entirely new species, raised from seeds received perhaps from some foreign source, selections from a number of seedling plants raised here, or hybrids, either of natural or artificial origin. Again they may represent plant material that is used elsewhere but has never been popularized in the area. Perhaps they may even be native to the region, which need a little "advertising" to make their usefulness known and appreciated. Whatever their source, the arboretum grows them for a number of years, judges their merits and examines them for faults, then reports to the public what it finds to be true.

The following is in the nature of a preliminary report on some trees which seem to be among the better new introductions into the Arboretum. The list is necessarily limited, and includes only those that will remain small enough to fit easily into the modern small garden.

Acer griseum — Paperbark Maple. This small Chinese tree is certainly among the most distinctive in the Arboretum's maple collection. It is a moderately rapid growing, spreading plant, which may ultimately reach a height of forty feet, although twenty-five feet would probably be a good average tree. It has an interesting three-foliolate leaf which is dark green above and light glaucous green below, set on obviously hairy stems which are very attractive with the light shining through them. These leaves may turn a most brilliant scarlet in the fall, adding interest to our rather drab autumn landscape. After the leaves have fallen the tree still holds interest, for the bark, which is a dark cherry brown, exfoliates from the stem in long papery strips, exposing an under-bark of light orange brown. It is this

character, of course, that gives the maple its common name.

Acer tegmentosum is another maple that appears very promising. It is a native of Korea and Manchuria, where it becomes a shrubby tree of some thirty feet. Our tree has several stems, which in turn divide into several more, so that the eventual result is a spreading tree with long, sweeping branches. Older trees are said to become round-headed. The handsome leaves are large, somewhat the shape of a grape leaf, yellow green in color, later turning yellow in the autumn. The bark is most attractive whether the tree is in or out of foliage, for it is olive green striped with numerous silvery distinctive streaks.

Hoheria glabrata—"Lacebark." This native to New Zealand is not for every garden, but for an area protected from the cold winds it is a superb choice. The tree will seldom be more than 20 feet tall, is usually very willowy in habit and set with arrowhead-shaped leaves that turn yellow in autumn. The flowers, which come in July, a time when we are short of flowering shrubs, are a translucent white with purple stamens and borne in clusters of 2-5 in the leaf axils. Whole branches may be clad in these deliciously fragrant flowers, reminding one of the cherry blossoms of early May. *Hoheria glabrata* is not entirely hardy. The Arboretum lost several that were 12-13 feet tall in the freeze of November, 1955—but it grows quickly and flowers young and is certainly worth the risk. W. J. Bean, in his book "Trees and Shrubs Hardy in the British Isles," makes this statement: ". . . when the branches are wreathed in the tissue-paper-like flowers there is no shrub of its type more attractive at the time, and few at any other!"

Malus "Blanche Ames" (fig. 15). There are many, many fine crabapples—we are growing more than 50 sorts in the Arboretum—but few were as startlingly lovely as this recent introduction of the Arnold Arboretum. "Blanche Ames" originated in 1939 as a seed from an

*Mr. Witt, who has been with the Arboretum for five years as Botanical Recorder, has just recently been made Assistant Director.

open-pollinated *Malus spectabilis* var. *Riversii*, the so-called Rivers crabapple. In 1950 we received a two-foot specimen which flowered first in April, 1953. This spring our tree was about 9 feet tall and only a little less wide, a cloud of lacy pink to white flowers, which lasted from mid-April to early May. The individual blossom is pale pink in bud, opening into a semi-double pink and white flower about $1\frac{1}{4}$ inches across. The original tree in Arnold Arboretum was less than 15 feet tall when 15 years old, indicating that it will probably stay small and compact. The flowers are practically scentless and the fruits are not especially attractive nor long-lasting, but these faults are easily forgiven when one sees the tree in full flower.

Magnolia salicifolia. The willow leaf Magnolia of Japan is a very variable tree, individuals differing one from another in habit, in leaf and in flower. Generally it is a small tree of about 30 feet, with a rather narrow crown.

The slender white flowers, which appear before the leaves in late March or early April, are carried at the ends of the thin branches. The leaves are neat, 3-6 inches long, dull green, and when crushed give off the scent of anise, as does the bark.

Even in its ordinary form this is an excellent tree, easy to grow and early to bloom, but occasionally a form appears that is truly superior. The Arboretum has such a form, received from Mrs. T. C. Frye in 1947, originally from the Clarke Nursery Company of San Jose, California. This plant, which has a narrow, almost fastigate habit, carries many beautiful, clear white, spicily fragrant flowers, almost half again as large as in the normal type. Since the tree is well over 10 years old and is now about 12 feet tall it is safe to

Below:

Malus "Blanche Ames" flower

(Fig. 15)



assume it will be of a size to fit into most small gardens. This plant is now being propagated and will probably receive a clonal name in the near future.

Sinojackia xylocarpa. In some ways this is the most interesting tree of the present list, having been in cultivation for less than 25 years. There is an excellent history and description of this elegant little relative of *Styrax* and *Halesia* in this BULLETIN, Vol. XVII, (3), pp. 79-80 (Fall, 1954), under the name *Sinojackia Rehderiana*. Our tree is now about ten or eleven feet tall, half its mature height, with a single stem and a somewhat weeping habit, especially in the lower branches. This spring it was covered with its little white bells that persisted for several weeks—a remarkably long flowering period when one considers that the *Halesia* and *Styrax* species lasted less than a week. It has proved to be remarkably hardy, surviving the cold of November 1955 with the loss of only a few twigs, while its companion *S. Rehderiana* was cut to the ground.

Sorbus Mougeotii. The mountain ash or
Below:

Sorbus Vilmorinii in Arboretum collection

(Fig. 16)

—PHOTO BY E. F. MARTEN



Sorbus genus contains some of the finest of our ornamental trees, and some of the most neglected. This species and the next are plants that differ from each other in practically all their obvious characters save size, and both would be distinct additions to any garden. *Sorbus Mougeotii* is native to the mountains of central Europe, and is called there the "Alpine-Mehlbeerbaum" or the alpine Rowan. It is a member of that section of the genus which has entire rather than divided (pinnate) leaves such as is found in the common European mountain ash, *S. aucuparia*. Our trees are beautiful little gray-green mounds about 12-14 feet tall, branching low and dividing into several main trunks. The leaves are a dark, lacquered green on the upper surface and gray green felted beneath. The flowers and the flower clusters are larger than in the common mountain ash, although very similar in appearance. The reddish brown fruit is also larger but not borne in such profusion, so is less likely to become a nuisance. Our trees are now about twelve years old, and are probably somewhat near their maximum size, although occasional trees have been reported to be 30 feet tall.

Sorbus Vilmorinii (fig. 16). This native to Western China is as graceful as *Sorbus Mougeotii* is sturdy. It belongs to that section of the genus which has divided leaves, and the leaflets are among the smallest of the mountain ash group. The tree has a handsome spreading habit, rarely becoming more than twenty feet tall, and often less. Its principal charm is in the fine character of its neat foliage, bright green in the summer, set on reddish brown shoots, and turning scarlet in the fall. In flower it is decorative, but in fruit even more so, for then clusters of small rosy-red beads sit on the ends of the branches like jewels on a green velvet pillow. As the fruit ages it changes from rose to almost white, a most distinctive combination when the leaves have colored. This fine plant was introduced into cultivation in France by 1902, but is still rarely grown outside Botanic Gardens and Arboreta. It proved to be somewhat tender in the November 1955 freeze, and we lost several plants completely, though others have come back after being cut to the ground.

Tsuga Mertensiana (fig. 17)—“Mountain Hemlock.” Certain trees, which in their native grounds are much too large for all but the largest of gardens, will remain small and grow so slowly under cultivation that they can be considered for a small garden. The Mountain Hemlock, native to our own state, is such a tree. In the Cascades and Olympics above 2,500 to 3,000 feet elevation this tree may be seventy to a hundred feet tall or taller, but brought into the garden as a small seedling, it may grow at the rate of a few inches a year, and so remain as well mannered as any small conifer, and better than many. Once it is growing well it will develop into a roughly conical shaped tree, often with several leaders, and densely clothed in a lovely blue-green cover of short needles bristling out at all angles from the branchlets. The cones, which probably won't develop for many years, are from one to three inches long, often bright purple when young and very decorative. For the rock gardener there are forms available from the high mountains that seem never to become more than a low mound.

Don't ask your nurseryman for any of the above trees, except the last, unless he is a specialist in the very new or the very unusual. Perhaps if our prognosis is correct, some of these will find their way into the trade in the next few years, and while they probably won't supersede the more common trees for small gardens, they may be of value to the discriminating gardener. These, then, are voted most likely to succeed.

✓ ✓ ✓
Memorials

A total of one hundred and six individuals and business groups contributed to the Arboretum Foundation Memorial Fund in memory of Mrs. Haakon B. Friele in the amount of \$1,605.00.

Many of our readers who knew him personally will have been saddened by the recent death of Mr. Clarence Prentice, nurseryman and landscape artist. Contributions toward a suitable memorial to him will be gratefully accepted by the Arboretum Foundation.



Above—
Tsuga Mertensiana on south slope of
Rhododendron Glen
(Fig. 17) —PHOTO BY DON NORMARK

Pertinent Spray Information

News of spraying to be done now and in
the near future†

Fall is upon us, and in spite of the fact many of us would rather turn our attention to things other than spraying, there is much to be done. A complete fall spray is very important in the over-all control of insects, and some plant diseases.

In checking some of the most important insects to be controlled by your fall spray, don't overlook these:

Weevil (adult stage). Spray broadleaved evergreens and soil around them with a chlorinated hydrocarbon (DDT, Chlordane, Lindane, Heptachlor or Aldrin).

Aphids. General around the garden at this time of year. Spray both sides of leaves for best control. Use a contact type material such as Malathion, Nicotine-Sulphate or B. H. C.

Spider Mites. Some broadleaved shrubs and hedges, all types of conifers and many decidu-

(Continued on Page 122)

†By courtesy of the Washington Association of Ground Sprayers.

The Arboretum Bulletin

VOL. XX, No. 3 SEATTLE, WASH. FALL, 1957

ARBORETUM FOUNDATION OFFICE HOURS

9 a. m. to 4:30 p. m.
Monday through Friday
Phone MInor 4510

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Special Notice

To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and THE BULLETIN will be discontinued.

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and other organizations.... | 10.00 |

The Arboretum Foundation,
University of Washington Arboretum
Seattle 5, Washington

I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name

Address

All memberships are non-assessable.

Notes and Comment

We welcome the following new members to the Arboretum Foundation (since the March 1957 BULLETIN.)

H. W. Albrecht, Prentice Bloedel, Mrs. Dick Buttorff, Mrs. George E. Deininger, Mrs. John E. Donahue, Stephen Doonan, Mrs. John C. Finley, Mrs. V. A. Gemlem, Mrs. N. D. Gershevsky, Mrs. Charles F. Hanquet, Mrs. F. C. Jennings, Mrs. Clayton R. Jones, Jr., Mrs. E. Herschel Kidwell, Mrs. John E. Koines, Mrs. Carl A. Kraft, Mrs. Wayne Kuykendall, Mrs. Carsten M. Lien, A. H. Meadowcroft, Mrs. Stanley C. Oas, Mrs. Emanuel Olson, Mrs. Richard Paton, Mrs. A. Vic Pedersen, Pegasus-Leidsestratt 25 (Amsterdam, Holland), Mrs. Robert K. Plant, Mrs. William Plommer, Mrs. H. Raphael, Mrs. B. C. Rhoton, Jr., Mrs. G. A. Rogers, Mrs. Richard D. Roselle, Mrs. Linne Starr, Mrs. Walter W. Stoll, Mrs. William J. Straith, Mrs. W. M. Swayne, Mrs. Donald P. Thomas, Mrs. Donald L. Thompson, J. R. Tolmie, Mrs. Daniel B. Trefethen, Jr., and Mrs. F. R. Young.

* * *

The Devin-Adair Company of New York announces the forthcoming publication this winter of an entirely new book on modern landscape design, written by the well-known Seattle nurseryman and landscape architect, John B. Strander.

The publisher states that "Mr. Strander's book is a clear departure from anything done in this country thus far and promises to be an important contribution to the profession." It is written for the amateur and will be illustrated with drawings and photographs by the author.

Mr. Strander will be remembered by our readers as a former member of the Editorial Board of the BULLETIN as well as a contributor to its pages.

* * *

A rare and welcome visitor at the end of July was Dr. Donald Wyman, horticulturist from the Arnold Arboretum, Boston, Massa-

chusetts, with members of his family. After spending most of the day in our Arboretum on the 30th, some members of the Board of Directors were invited to meet him at the home of Mr. Carl M. Ballard, President of the Arboretum Foundation.

* * *

The promotion of Mr. J. A. Witt to Assistant Director on July 1st, 1957, after 4½ years on the Arboretum staff, principally as botanical recorder, will be welcomed by many Foundation and garden club members who have enjoyed his services as guide on tours, or attended a talk by him on some phase of the Arboretum work or its plant collections.

* * *

The 1957-59 Arboretum budget, from the College of Forestry, is maintained at its previous level, plus an additional \$2,200.00 for part-time labor. Our hopes of obtaining an additional full-time guide-recorder, to relieve Mr. Witt of some of his numerous present duties, have consequently faded for the present.

* * *

The former Upper Road through the Arboretum has, with the consent of the Streets and Sewers Committee of the City Council, been renamed "Arboretum Drive North." Unfortunately the sign, supplied by the Parks Department, which was placed at the south end of the Drive was removed by vandals almost as soon as erected.

* * *

A generous consignment of 52 plants was received from the Los Angeles State and County Arboretum early in September. Of the twenty species sent seven are entirely new here and therefore particularly welcome; the balance chiefly comprises good plants of which we now have few or no representatives. This supplements a collection of thirteen kinds sent us in October 1956.

Let's Brag About Our Arboretum Units

When members of Arboretum Unit No. 65 decided that their project for 1957 would be a gift to the Arboretum of four cement benches, our chairman talked it over with Mr. Carl Ballard, Arboretum Foundation President.

Mr. Ballard was delighted. He suggested that other Arboretum Units might be interested in joining the project since many more benches could be used.

In a short time our chairman learned of seven other Units who liked the idea. So, instead of the four originally planned, twelve benches were ordered at one time at a cost of \$26.30 for each curved style and \$21.15 for each straight-styled one. To save delivery charges the Arboretum truck was used for transportation.

The Arboretum Units that joined together to make this possible are:

Unit No. 65 (Broadmoor*), three curved and one straight bench; Unit No. 1, one straight bench; Unit No. 2 (Mary E. Williams), one straight bench; Unit No. 10 (Seedlings), one straight bench; Unit No. 27 (Vera Poole), one straight bench; Unit No. 37 (Diligent Diggers), two straight benches; Unit No. 55 (Sally Bunge), one curved bench; Unit No. 64 (Garden-aires), one straight bench.

Now when you wish to loiter in our beautiful Arboretum there are twelve well selected spots where you may rest as you enjoy the loveliness around you.

If other Units are interested, information regarding the benches may be obtained from the Foundation office. (MInor 4510).

MRS. C. W. TEWELL

*NOTE: Sometimes lovingly called the "Grandmothers' Unit."

Future plans for the ARBORETUM BULLETIN include a Symposium on the best hardy Rhododendrons for this area in the forthcoming winter issue—and a similar grouping of articles on Oaks for the Fall of 1958.

ARBORETUM NOTEBOOK

This section is particularly designed for notes, information and queries concerning beautiful or unusual plants from growers of all types or experience. We solicit your remarks and ideas, but space limitations may sometimes restrict us to publishing those of the widest interest.

Garden Hints . . .

OCTOBER

Bulb planting, of course, is the most important task in October. If you have a rock garden there is nothing more charming than the dwarfer species of bulbous irises. *I. his-trioides*, *I. reticulata*, *I. Danfordiae* are but a few. These all need sheltered sunny corners.

Lilies should be planted now. Those who saw the plantings of the new strains of "Mid-Century" lilies in the Arboretum this summer will be inspired to buy some. They range from pale apricot to deep orange and with a background of green they are delightful as well as striking. Lilies should also be transplanted and divided now. To divide them, gently separate the bulbs that have multiplied. Very small off-shoots may be put in a sandy soil in a nursery bed but often there are divisions that will be ready to blossom next year.

It is true that leaf and flower buds need a time of low temperature to develop. The buds on branches of many of our spring-flowering shrubs cannot be forced as usual if started in the fall in warm water in a warm room. They first need cold weather in November and December to form the buds.

If, by chance, you are starting Candelabra primroses and have seedlings, October is a good month to transplant them to their permanent homes. Choose a time after a heavy rain, when the soil is wet. They have great, sprawling roots which take plenty of room.

NOVEMBER

If you are digging a new garden spot dig deeply and cover the surface with a fairly lavish covering of hydrated lime. Most of our soil in the west is too acid for the best growth of plants.

Primroses and wallflowers can be planted on any mild day and tulips, especially Darwins, can be planted now.

Chrysanthemums should be cut back to produce good cuttings for spring.

Most rose growers say they find little difference in their success planting roses in fall or spring. Possibly there may be fewer disappointments when ordering roses in the fall.

It might be interesting when selecting rose bushes to choose some varieties that have fine hips and this adds a season of color to our rose beds. *R. Moyesii*, with flagon-shaped fruits, should win a place in any garden.

Rhododendrons are "surface-rooting" plants and it is well to remember that deep planting is the reason for the death of more rhododendrons than we generally suspect.

All gladioli corms should be lifted and stored in a dry, frost-proof place.

If you are looking for a shrub to bloom all through the winter until March, try *Stachyurus praecox*. There is a fine specimen in the Winter Garden at the Arboretum. It is a freely-blooming shrub with style and distinction. Weather never seems to harm its pale yellow blooms which grow in rather rigid, pendent spikes.

DECEMBER

Iris stylosa (*I. unguicularis*) is beginning to blossom. It will stand pretty rough weather but slugs it cannot effectively resist. They—the slugs—attack the buds and ruin the blossoms overnight.

All the hellebores proved their worth and beauty during the last two winters. No gardener should hesitate to plant one or all varieties. They are an addition to any garden, large or small. Lenten roses (a most misleading name) are the offspring of such species as *Helleborus orientalis*, *lividus*, *colchicus* and others. The colors are impossible to describe. They range through pink, mulberry, plum and many shades between; each child producing a color of its own fancy. They only ask two considerations. They demand a

year to establish themselves; they like a good deep loam (they loathe mud) but they will do fairly well with less than rich soil. They are not everyone's flower by any means but I have a deep affection for them, more, perhaps, than for any other winter flower. Their sturdy courage and reliability is an admirable trait seldom seen in any living thing.

Late flowering clematis are seldom seen but they have long been known in gardens. *C. flammula* is fragrant and white, about an inch across. One variety has a margin of plum color. *C. Durandi* flowers during October and November and is deep blue. *C. texensis* blooms late, as does Duchess of Albany and Sir Trevor Lawrence.

Primulas and all shallow-rooting plants should be watched to keep pressed into the soil. Frost often heaves them.

When pruning don't forget that cherries and plums bear fruit on the new wood, so do not prune them indiscriminately.

Do not leave cuttings of fruit trees or bush cuttings around the garden as they may be infested with nests of insects.

Megasea (*Saxifraga cordifolia* or *S. c. purpurea*) is beginning to bloom. It likes good loam and rather moist soil to do its best.

Pernettya mucronata is a winter joy and most birds do not like the berries. The fruits may be white, pink, crimson, mauve or lilac and make charming winter decorations.

Some Shenandoah Valley Roses of Yesterday

THE ROSES that I knew when I was a child in the Shenandoah Valley of Virginia, some eighty years ago, are these: George the Fourth, sometimes called King George the Fourth, deep, velvety crimson; Cinnamon Rose, many-flowered, rather dull pink, spicy-flowered; the Maiden's Blush, beautiful pinkish buds opening creamy white (subject, alas! to blight); the Baltimore Belle, or Seven Sisters, a climber, heavy clusters, often seven—really—of pinky-white buds and blossoms; the York and Lancaster rose, greatly loved because its blossoms were alternately red or white as the name suggests and these are the colors of the Confederate flag. The shy, lovely moss rose was in every garden. There was the Persian rose too, its yellow blossoms making a prickly mat and sweetening all the air wherever it was given a root-hold. Occasionally one came upon a Cabbage Rose blooming indomitably among the rubble of a burned-down dwelling. Its name derives from its surprising circumference. It is small, as a wild rose, but each silky, translucent petal of clearest scarlet is big enough for a boat or a throne for the Queen of Fairies.

Most treasured of all was the Hundred-

Leaved rose with its abundant, disk-shaped blossoms, clear pink, made up of many involuted petals from which it gets its name and not from any peculiarity of leafage. We children appreciated its gentleness—it is an almost thornless rose—and housewives gathered the flowers to put among the household linens because of the lasting attar-of-roses fragrance . . . There were other roses, Jacqueminot, dependable Frau Karl Druschki, Safrano, but these were rather rare and needed a bit of coddling. The others were as much a part of summer as honeysuckle and sweet clover. Rosarians list them nowadays as "Old Fashioned" and even as "Disappearing."

When in the Nineteen Twenties, we bought our home "To Leeward" on Bainbridge Island, it was a joy to find Baltimore Belle climbing all over our front porch. A bit mildewed, it would have enjoyed the hardwood ashes our Virginia roses had in lavish abundance, but it bloomed as heartily as if it lacked nothing. About ten years ago we spied a moss rose simply rioting, quite out of character, at the McLean home at West Blakely and the slip they gave us is now happily at home at "To Leeward."

A year ago my son bought a home on one of the Island's so-inviting lanes. Our side yard ends in a thicket of young firs, alder saplings, wild cherries and Scotch broom, bested by briars, bracken, dandelions and their prolific kin. In early July this year I was working happily, if inefficiently, at the edge of the jungle when in its depths I saw a flash of pink and a breeze brought me the fragrance of attar-of-roses. It is nearly seventy years since I had last known that intoxicating perfume when the Hundred-Leaved rose that grew beneath my Mother's chamber window in Virginia was in bloom.

I struggled through tall grasses and the weeds and in those unlikely surroundings I found a Hundred-Leaved rose, just one, wide-opened bloom and a solitary bud which looked as they always looked, like a small, flat, red button. There were two well-grown plants, their roots deep buried under a heavy cherry

log, their thornless stems bearing healthy five-parted leaves though pale for lack of sunlight, reaching for it till they looked like climbing roses. Nobody can tell us how long ago a rose was planted here but Sweet William grows at its feet with sprigs of privet. Struggling all the way to the edge of the thicket is that magenta-flowered plant (*Agrostemma*) with dusty-miller leaves whose name I can never remember. None of our neighbors can tell us who planted a garden here once upon a time and made a lovely miracle for me.

Since my discovery I have heard of another Hundred-Leaved rose, this one quite near at Manitou Beach, brought, perhaps, from a Maryland home.

Donald Culross Peattie and other lovers of old fashioned roses might find good fortune here on Bainbridge Island.

HENDERSON DAINGERFIELD NORMAN

Plant Propagation Notes for Fall

SEED—Gather, clean and store seed of any unusual annual or perennial. Some choice kinds escape us because the seed is difficult to locate on the market. Saving it for one's self or for others proves enriching to the garden.

Primula and Meconopsis (Blue Poppy) seeds need to be sown when fresh. Plant as soon as harvested.

Some woody plants which you may wish to grow in quantity, ripen their seed in time for fall collecting. Representatives of this group are maples, oaks, Ceanothus, *Cornus Kousa* and *Cornus canadensis*.

LAYERING—Another fall activity is the layering of various kinds of Andromeda, Azalea, Ceanothus, Erica, *Calluna vulgaris*, Kalmia, Rhododendron and other choice shrubs.

DIVIDING—Some people like to divide perennials in the fall, others prefer to wait for early spring. If the dividing is done in the fall the work should be done early enough that the plants have ample time to establish

good roots before frost has a chance to dislodge the root balls. One type of plant which belongs to this class is the border perennial. Another is the perennial ground cover such as Ajuga.

CUTTINGS — A year-round program of propagating by means of cuttings calls for a good deal of fall activity.

Herbs of questionable hardiness should have a few "slips" taken before frost as insurance against complete loss. This suggestion would apply to other half-hardy shrubby plants also, e. g., Ceanothus and Cistus.

September ends the season for soft cuttings of such plants as shrubby Penstemon. Half-ripe wood of Kinnikinnick—all varieties, even *Arctostaphylos nevadensis* from east of the Cascades—may still be struck. A list of plants amendable to fall cuttings would include Aucuba, Buddleia, Buxus, Escallonia, Eucryphia, Fuchsia, Pernettya and Stranvaesia.

Chrysanthemum cuttings may be taken in

November. A woody plant best done in that same month is *Camellia sasanqua*.

Fall would be a good time to seek some help from the many good books on propagation. Unusually valuable are these two: "Plant Propagation Practices" by James S. Wells; and, in a more specialized field, "The Propagation of Alpines," by L. D. Hills. Mr. Wells discusses at length the popular mist spray method of propagating cuttings. It has been our experience that, with mist spray, larger cuttings may be rooted successfully.

JAMES A. BUZARD

FRANCES KINNE ROBERSON

1 1 1

Barberries—in the Fashion Trend

(Continued from Page 94)

flowers in November-December. To 10 feet.

PINNATA (fascicularis)—From California and parts of Mexico. Tall growing, very spiny foliage.

REPENS — Western N. America. Low-growing type, similar to *Aquifolium*, but leaves dull on upper surface.

WAGNERI—Beautiful colored hybrid—brilliant foliage.

The low-growing berberis and some of the mahonias are particularly efficacious for planting in the rock garden. They, too, can be planted in groups to augment a sloping bank or terrace.

A few of the best for this purpose:

AETNENSIS—From Sicily; low-growing; prolific berry-bearing.

BUXIFOLIA nana (E)—Fine shaped little bushlet.

*CANDIDULA (E)—From China. Dwarf bushlet of compact form.

EMPETRIFOLIA (E) — From S. Chile. Low-growing type with slender trailing branches; very attractive.

STENOPHYLLA coccineae — Beautiful coral-red flowers.

STENOPHYLLA corallina compacta — Lovely red flowers; most suitable for rockeries.

STENOPHYLLA semperflorens — Long flowering dwarf type.

THUNBERGII minor — Fine form for rockeries or banks; foliage remains deep red throughout the season.

VERRUCULOSA (E) — From China — compact with small foliage, yellow flowers; most suitable for rockeries.

WILSONIAE—From West China. One of Mr. Wilson's very dwarf fine forms—prolific berry-bearing and good foliage.

NOTE: The University of Washington Arboretum has a good collection of the species of Berberis, some just numbered, others still under quarantine; the following, however, are among those growing there: *B. calliantha*, *B. Chenaultii*, *B. Darwinii*, *B. formosana*, *B. Julianae*, *B. Lempergiana*, *B. replicata*, *B. stenophylla* var. *Irwinii*, var. *compacta nana*, and *B. triacanthophora*.

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BOOK REVIEWS

The Trees on Your Street, by Desmond Muirhead. Portland General Electric Co., Portland, Oregon (1957). Price \$2.00. (*Copies available at Arboretum).

THIS 36-page booklet, finely produced in every respect—layout, glossy paper, type and illustrations—is a welcome new departure for the Northwest, written by one of the region's most enterprising young landscape architects—"to help you choose the trees for your street."

With this objective it depicts street planting plans, various methods of planting along streets, shows formal and informal lines or groups, with numerous suggested associations of trees for the latter. Then follow short lists of trees with special qualifications, for smoky areas, flowers, foliage effect, fall color, etc., and three pages with short descriptions and small colored reproductions of large, medium and small trees respectively; most of these show the habit of a mature tree.

Two pages are devoted to the problems of too large trees on streets; two more to those concerning lights and power lines, all made clearer by excellent photographs—and two others to how to plant trees. Finally, four practical pages of questions and answers, on such problems as what size trees to plant and how far apart, whether in rows, of one kind or mixed, evergreens or not, the cost of maintenance, etc.

A list of suggested further reading in books and magazines concludes the text, though not the photographs. Every page carries some appropriate pictures, the majority in color, by Graham Warrington; these, and the line drawings by Georges Kuthan add greatly to the value of this publication, which will be of real use to anyone considering, or concerned with, planting trees, whether few or many, in any of our Northwest cities.

B. O. M.

Plants and Gardens—Handbook on Mulches—Brooklyn Botanic Garden Record, Spring 1957—Vol. 13, No. 1. Price \$1.00.

THIS issue contains a complete review of mulches and mulching practices. The theory of mulching is adequately covered in simple language so that the necessity for and desirability of mulches is clearly brought out.

A large group of contributors explain their particular likes and dislikes for material for

mulches along with practices for many different plants. All forms of organic mulches from sawdust to seaweed are included along with articles on inorganic materials as well. Many new ideas for mulching such as the use of plastic material are to be found in the handbook.

The publication is well illustrated and this adds much to its value. There is also a useful directory table in the front of the manual listing each type of mulch described in the manual.

In the opinion of this reviewer this issue of *Plants and Gardens* should be read thoroughly by all gardeners. Mulching practices illustrated and described will do much to improve Northwest gardens. We should be especially aware of the value of woody materials for mulches in this region of an abundant wood supply.

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(Continued from Page 95)

little and you may have freshly spaded ground to plant in.

9. Spring flowering bulbs should be planted in the fall; summer flowering bulbs are usually planted in spring and dug in the fall to be stored indoors over winter.

10. Deciduous trees should usually be planted when they are bare of foliage in winter or early spring. All winter long people are incredulously saying to nurserymen, "But you can't plant trees now, can you?" Winter is when nurserymen transplant many of their trees in the Northwest.

Nurserymen would like to help you secure those new, rare and different shrubs or trees that you have heard about or seen but they too often find it quite impractical to cooperate in the venture for several reasons.

Most of the larger nurseries have a wide assortment of trees, shrubs and vines of types well suited to the locality. Our nursery may be typical, growing 300 kinds of evergreens and over 300 kinds of deciduous shrubs and trees, plus many vines, perennials, rock plants, annuals, bulbs and many berry bushes. Yet, people frequently want to obtain some variety or size we do not have. Believe me, we would like to accommodate them, and we do try within our abilities to do so. Here, however, are some of the problems encountered. First, a nurseryman is busy. He has no spare minutes. Stuffed in his files are hundreds of catalogues of all sizes and shapes from all over the United States and Northern Europe. Somewhere in one of them may be listed the rare tree you asked for. Unless he remembers where, it will be a long search. When and if located, an efficient order must be worked out—ten trees of a kind to obtain a reasonable price, 200 pounds total weight to travel economically, cash with order to save delay, adding an uncertain extra amount to cover packing cost—only full truck loads are packed free.

Ordering those rare trees is the easiest part. The real problems show up with arrival. Were they packed efficiently, or so heavily as to create an exorbitant freight cost, or so carelessly as to be broken or dried out? Did they freeze or heat en route? Are they free of disease, insects, unwanted weed varieties, and can they take our climate? Is the root system adequate? Are they the size ordered and paid for? In short, will they perform as hoped? And if so, who is going to buy all these other things that had to be ordered to get this one rare tree at a somewhat moderate cost? Due to these problems and because nurserymen are rarely adequately financed, it just seems that too often it becomes more practical to say "I can't get it" when someone asks for the rare tree, no matter how worthy and desirable it may seem.

There are, fortunately, several excellent nurseries in this region, each growing somewhat different types of shrubs and trees. Usually the better ones know pretty well what each other has and are happy to direct the seeker of the rare things to the most likely source.

Meanwhile, we all look to the Arboretum to discover, test, publicize and introduce a succession of new, or forgotten old, worthwhile varieties of plant life, and there lies much of the hope for you who seek something different and better for your garden.

We nurserymen do sincerely want you to have and enjoy a beautiful, livable garden. We will do all we can to help you achieve that result.

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Spring Planting in the Arboretum, 1957

and southwest of the lookout (9 plants). Various other species or hybrids, 6 plants, including the Ansu apricot from Northeast Asia.

RHODODENDRONS: 16 plants of species, 11 of hybrids, to Rhododendron Glen or Loderi Valley. Among the hybrids are three plants each of "Blue Peter" and "Princess Elizabeth."

ROSA: A large addition to the collection planted at the end of March, comprising 38 plants of 21 different species, and 7 hybrids, mostly from the Skinner Nursery in Manitoba.

SORBUS: 12 plants, representing 6 species, added to the collections, those with pinnate leaves (section *Aucuparia*) being placed in the new collection east of the magnolias, across the Upper Road.

TILIA: 6 young trees placed beside the road leading from the Boulevard to the north entrance of the Arboretum, including the

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large-leaved European Linden, *T. platyphyllos*, and the Asiatic *T. japonica* and *T. amurensis*. The last originated from scions received from the Arnold Arboretum, Boston, in March, 1951.

WILLOWS (*Salix*): A small planting made in the low wet area beside the Boulevard north of the East Lynn Street bridge—5 species, 1 plant of each, including the corkscrew willow (*S. Matsudana* var. *tortuosa*) and the silver-leaved *S. alba* var. *sericea*.

VACCINIUMS: 69 plants, of 12 species, added to the collection west of the magnolias, amongst them natives of Japan, eastern and western United States and one from South America, the evergreen *V. floribundum* (*Mortinia*).

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Japanese Shrubs in Our Arboretum

(Continued from Page 91)

Evergreen rhododendrons are not in great quantity in Japan but three series are represented—*Ponticum*, *Triflorum*, and *Lapponicum*. Most of these grow in the northern and central islands where the climate is much like that of the Pacific Northwest. The 1956 RHS "Handbook" rates them all at A and B, or hardy anywhere in the British Isles.

Japanese members of the *Ponticum* Series grown here are *R. Degronianum*, *R. yakusimanum*, *R. Fauriei*, and *R. brachycarpum*. *R. yakusimanum* flowered for us this year, at the age of five years, and this tendency toward an early flowering is one characteristic which has brought this extremely hardy rhododendron to the notice of hybridizers. F. E. W. Hanger, in the "Rhododendron and Camellia Year Book" for 1956, says "Number one of my species must be *R. yakusimanum*.

It is so perfectly hardy, such a free bloomer year after year with a habit so compact and in every way the ideal rhododendron . . . On one occasion it received a First Class Certificate and is always greatly admired when covered with its apple pink, fading to white, compact trusses of blooms."

R. Metternichii is listed in our file but I could not find it in the *Ponticum* section. The RHS "Year Book" says "true form very rare in Europe, plants under this name being usually *R. Degronianum* or *R. Makinoi*. Its rose-colored corolla is 7-lobed and it has 14 stamens."

There are three plants of *R. Fauriei* in the Glen. This species is found in subalpine regions from central Honshu to central and southern Korea. Dr. Hara says it is separated from *R. Makinoi* by its more rounded or "subauricled" leaf-base. The typical *Fauriei* has glabrous leaves but according to him, there is a form with tomentose leaves.

We have thirteen plants of *R. brachycar-*

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pum at the head of the Glen and two more below the Lookout. Dr. Hara casts some doubt on the validity of this name, saying it "was rejected to avoid a confusion, because it can be interpreted either as *R. Degro-nianum* or as *R. Fauriei* var. *roseum*, and the type specimen is not extant." However, the RHS "Handbook" gives it specific status. There seems to be considerable variation as to color, from creamy-white, through "pale yellow flushed with pink, green spotted at back," to var. *rosaeflorum* with its pink flowers.

Like *R. yakusimanum*, *R. Keiskei* rates three stars in the Handbook. It has been described as "a dwarf *R. lutescens*" and "very attractive in the rockgarden." It has un-potted lemon-yellow flowers and pointed leaves.

Mr. Shigataka Suzuki, of Tokyo, was mentioned in an issue of "Baileya" as a source for Japanese seeds, but Mr. Suzuki's wares are not for sale. He is interested in exchange only—"Ericaceae and Iridaceae preferred." I think that should be the motto emblazoned on my crest, and especially when it comes to the shrubs of Japan.

—ERICACEAE PREFERRED.

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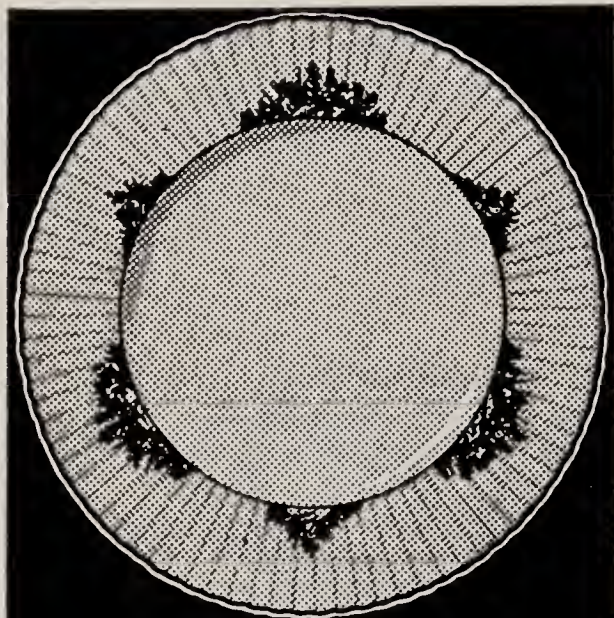
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Pertinent Spray Information

(Continued from Page 107)

ous tree. Wet all parts of plants with spray. Contact type spray or a miteicide, Malathion or Aramite*.

Chewing Worms. Many types evident at this time—Lilac leaf miner, tree slugs, rose chafer, etc. Spray with chlorinated hydrocarbons such as DDT, Chlordane, Lindane.

Tip-Borer. Very effective time for control of this insect on coniferous evergreens. Spray thoroughly with stomach poison type spray such as lead arsenate, or DDT.

Leaf Hoppers. General on deciduous plants and on some deciduous trees in the fall. DDT is the best control measure.

Lawn Moths. Most lawns are showing some damage. Spray with a combination of Malathion and DDT. Soak lawn area.

Pear Psylla. Control can be had of adults and all nymph stages by adding one tablespoon of Slugfest** to each gallon of mixed Malathion spray (25 per cent wettable Malathion).

Garden Slugs. As we have more moist mornings and evenings the slug populations build up rapidly. Spray all likely areas with Slugfest.

The basic function of fall spraying is to control the adult to prevent it laying eggs for the following season.

Plant Diseases. Fall is an excellent time to prune out all dead and semi-dead woods caused by plant diseases. Spray affected plants with a good fungicide (Ziram***, Ferbam***, Captan, copper or sulphur) before leaves fall.

A thorough fall spray followed by a correct dormant spray program will insure you of a finer lawn and garden next year.

* Aramite appears to be damaging to Hydrangeas, Sweet Peas, and Chrysanthemums.

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